

AMENDMENT TO THE CLAIMS

1. (currently amended) A cleaning device for cleaning at least one object comprising:
 - an inner vessel configured to contain a first liquid and the object;
 - an external vessel configured to contain a second liquid and the inner vessel, wherein the second liquid is acoustically coupled to the first liquid; and
 - at least one transducer acoustically coupled to the external vessel and configured to generate acoustical energy which is transferred to the object;wherein the first liquid has a first dissolved gas concentration of a first gas and the second liquid has a second dissolved gas concentration of a second gas, the first dissolved gas concentration is different than the second dissolved gas concentration.
2. (original) The cleaning device of claim 1, wherein the at least one transducer acoustically operates in one of an ultrasonic frequency and a megasonic frequency.
3. (original) The cleaning device of claim 1, wherein the first liquid and the second liquid comprise water.
4. (original) The cleaning device of claim 1, wherein the first gas and the second gas comprise air.
5. (original) The cleaning device of claim 1, wherein the dissolved gas concentration of the first gas in the first liquid and the dissolved gas concentration of the second gas in the second liquid is substantially constant during application of the acoustic energy to the object.
6. (currently amended) The cleaning device of claim 1, wherein the first dissolved gas concentration of the ~~first gas in the first liquid~~ is greater than the second dissolved gas concentration of the ~~second gas in the second liquid~~.

7. (original) The cleaning device of claim 1, wherein the first liquid is at a first temperature and the second liquid is at a second temperature.

8. (original) The cleaning device of claim 1, wherein the first liquid is at a first flow rate and the second liquid is at a second flow rate.

9. (original) The cleaning device of claim 1, wherein the inner vessel is an inner tank having an open top end and the external vessel is an external tank having an open top end.

10. (currently amended) The cleaning device of claim 1, wherein the inner vessel is an inner conduit having a first inner end and a second inner end and includes the first liquid having a first fluid flow, the first fluid flow ~~first liquid~~ transfers the object from the first inner end to the second inner end; and wherein the external vessel is an external conduit having a first external end and a second external end and includes the second liquid having a second fluid flow, the second fluid flow ~~second liquid~~ flows from the first end to the second end.

11. (currently amended) The cleaning device of claim 1, wherein the inner vessel is an open top inner channel having a first inner end and a second inner end and includes the first liquid having a first fluid flow, the first fluid flow ~~first liquid~~ transfers the object from the first inner end to the second inner end; and wherein the external vessel is an open top external channel having a first external end and a second external end and includes the second liquid having a second fluid flow, the second fluid flow ~~second liquid~~ flows from the first external end to the second external end.

12-19. (canceled).

20. (original) A cleaning device for cleaning at least one object comprising:

an inner vessel configured to contain a first liquid and the object;

an external vessel configured to contain a second liquid and the inner vessel, wherein the

second liquid is acoustically coupled to the first liquid; and
at least one transducer acoustically coupled to the external vessel and configured to generate
acoustical energy which is transferred to the object;
wherein the first liquid has a dissolved gas concentration of a first gas that is greater than a
dissolved gas concentration of a second gas in the second liquid.

21-26. (canceled).

27. (new) The cleaning device of claim 1, wherein the first gas and the second gas comprise
nitrogen.

28. (new) The cleaning device of claim 1, wherein the first liquid and the second liquid comprise
a solvent.

29. (new) The cleaning device of claim 20, wherein the first liquid and the second liquid comprise
water.

30. (new) The cleaning device of claim 20, wherein the first gas and the second gas comprise air.

31. (new) The cleaning device of claim 20, wherein the dissolved gas concentration of the first
gas in the first liquid and the dissolved gas concentration of the second gas in the second liquid is
substantially constant during application of the acoustic energy to the object.

32. (new) The cleaning device of claim 20, wherein the inner vessel is an inner tank having an
open top end and the external vessel is an external tank having an open top end.

33. (new) The cleaning device of claim 20, wherein the inner vessel is an inner conduit having a
first inner end and a second inner end and includes the first liquid having a first fluid flow, the
first fluid flow transfers the object from the first inner end to the second inner end; and wherein

the external vessel is an external conduit having a first external end and a second external end and includes the second liquid having a second fluid flow, the second fluid flow flows from the first end to the second end.

34. (new) The cleaning device of claim 1, wherein the inner vessel is an open top inner channel having a first inner end and a second inner end and includes the first liquid having a first fluid flow, the first fluid flow transfers the object from the first inner end to the second inner end; and wherein the external vessel is an open top external channel having a first external end and a second external end and includes the second liquid having a second fluid flow, the second fluid flow flows from the first external end to the second external end.

35. (new) A cleaning device for cleaning at least one object comprising:

- an inner vessel having a first inner end and a second inner end and configured to contain a first liquid having a first fluid flow rate and the object, the first fluid flow rate configured to transfer the object from the first inner end to the second inner end;

- an external vessel having a first external end and a second external end and configured to contain a second liquid having a second fluid flow rate and the inner vessel, wherein the second liquid is acoustically coupled to the first liquid and the second fluid flow flows from the first external end to the second external end; and

- at least one transducer acoustically coupled to the external vessel and configured to generate acoustical energy which is transferred to the object;

- wherein the first liquid has a first dissolved gas concentration of a first gas and the second liquid has a second dissolved gas concentration of a second gas, the first dissolved gas concentration is different than the second dissolved gas concentration.

36. (new) The cleaning device of claim 35, wherein the inner vessel comprises an inner conduit and wherein the external vessel comprises an external conduit.

37. (new) The cleaning device of claim 35, wherein the inner vessel comprises an open top inner channel and wherein the external vessel comprises an open top external channel.

38. (new) The cleaning device of claim 35, wherein the dissolved gas concentration of the first gas in the first liquid and the dissolved gas concentration of the second gas in the second liquid is substantially constant during application of the acoustic energy to the object.

39. (new) The cleaning device of claim 35, wherein the first dissolved gas concentration is greater than the second dissolved gas concentration.

40. (new) The cleaning device of claim 35, wherein the first fluid flow rate is different than the second fluid flow rate.